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10/055,669	01/23/2002	Che-Hsiung Hsu	PE0672 US NA	8013

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EXAMINER
HAMPTON HIGHTOWER, PATRICIA

ART UNIT	PAPER NUMBER
1711	

DATE MAILED: 06/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/055,669	Applicant(s) HSU, CHE-HSIUNG
	Examiner Patricia Hightower	Art Unit 1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 August 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 January 2002* is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *4* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Information Disclosure Statement

The Information Disclosure Statement filed August 19, 2002 has been considered and has been made of record.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 8 and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 8, line 2 "peroxidace" should have been –peroxidase–;

In claim 22, line 4, "seond polymer" should have been –second polymer--.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4 and10-20 are rejected under 35 U.S.C. 102(b) as being anticipated by EPO 828184A1 to Shaw-Klein et al.

Shaw-Klein et al (EPO 828184A1) discloses an imaging element comprised of a support, an imaging forming layer and a transparent electrically conductive layer which includes ***an effective amount of polyaniline styrene sulfonic acid, in a preferred embodiment the polyaniline styrene sulfonic acid is dispersed in an aqueous binder*** which anticipates the claimed invention. See abstract; the claims, pages 4, lines 5-9,30-48; page 6, lines 38-58; pages 7-8; claims 1-9. Shaw-Klein teaches at page 4, lines 5-9 the electrically-conductive layers are also commonly used in imaging elements for purposes other than providing static protection. Electrically-conductive agents utilized as antistatic agents in photographic silver halide imaging elements are often also useful in the electrode layer of electrostatographic imaging elements.

Shaw-Klein teaches at page 6, lines 38-58 the imaging elements of his invention at least one electrically-conductive layer comprises polyaniline styrene sulfonic acid in an effective amount to provide antistatic properties to the electrically-conductive layer. Binders useful in antistatic layers containing polyaniline styrene sulfonic acid include: water soluble polymers, cellulose compounds, synthetic hydrophilic polymers such as vinyl polymers and copolymers; other suitable binders include aqueous emulsions of addition type polymers and interpolymers prepared from ethylenically unsaturated monomers such as acrylates, methacrylates, styrenes such as substituted styrenes, vinyl ethers, and aqueous dispersions of polyurethanes or polyesterionomers. The preparation of the poly(aniline/polystyrene sulfonic acid) were made insitu by oxidative polymerization aniline in aqueous solution in the presence of poly(styrene sulfonic acid) using ammonium peroxodisulfate as the oxidant.

Claims 1-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Samuelson et al (USP 6,018,018).

Samuelson et al (USP 6,018,018) discloses polymers formed enzymatically in the presence of an oligomeric or polymeric template, the method includes combining at least one redox monomer or in some cases, a redox oligomer, with a template an an enzyme such as horseradish peroxidase and an initiator (hydrogen peroxide) to form a reaction mixture; the template assisted enzymatic polymerization results in a new class of polyanilines and polyphenols with electrical and optical stability, water solubility, processability and environmental compatibility; which anticipates the claimed invention. See abstract; col. 2, lines 66-67; col. 3, lines 4-7,8-12, 16-41,42-66; col. 4, lines 5-7,8-29,31-33,40-51,54-56,60-67; col. 5, lines 1-18, 27-30, 33-49, 50-67; example 1; the claims. Examples of suitable template polymers include sulfonated polystyrenes, vinyl polymers such as polyvinyl benzoic acid, polystyrene sulfonic acid and polyvinylpolyphosphonates, etc. col. 4, lines 25-39.

Samuelson et al teaches the polymerization reaction is a redox reaction and typically is initiated by adding a suitable oxidant, such as a hydrogen peroxide solution, etc. Col. 4, lines 43-59. Samuelson et al teaches at col. 5, lines 34-49,50-67, in the method the template-assisted enzymatic polymerization of aniline can be carried out in an aqueous solution, adding the aniline monomer, an appropriate template, sulfonated polystyrene (SPS) in ratios ranging from about 1:10 to about 10:1 SPS/aniline. The

enzyme horseradish peroxidase then can be added to the reaction mixture, to initiate the reaction, an oxidizer, such as hydrogen peroxide, can slowly be added.

Claims 1-6 and 10-21, 22-24 and 28-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Elsenbaumer (USP 5,160,457).

Elsenbaumer (USP 5,160,457) discloses thermally stable forms of electrically conductive polyaniline and compositions of thermally stable electrically conductive substituted and unsubstituted polyanilines and to conductive articles formed from such compositions; which anticipates the claimed invention. See abtract; col. 1, lines 1020, col. 2, lines 20-67;col. 3, lines 1-30; col. 4, lines 5-67; cols. 5-7; col. 8, lines 11-65; col. 9, lines 1-20, 21-67; col. 10, lines 1-68; col. 11, lines 55-68; col. 12, lines 11-50,53-68; col. 13, lines 7-17-19; col. 13- lines 35 – col. 14; col. 15, lines 15-68; col. 16, lines 1-42; examples 1-6; claims.

Elsenbaumer (USP 5,160,457) discloses the thermally stable conductive ***polyaniline comprises two essential ingredients***; ***one is a substituted or unsubstituted polyaniline are homopolymers and copolymers derived from the polymerization of unsubstituted and substituted anilines of the Formula I,*** wherein n is an integer from 0 to 4; m is an integer from 1 to 5 with the proviso that the sum of n and m is equal to 5; R_2 and R_4 are the same or different and R_3 substituents, hydrogen or alkyl and R_3 is the same or different at each occurrence and is selected from the group consisting of alkyl, alkenyl, alkoxy, cycloalkyl, cycloalkenyl, alkyanol, amion, alkylamino, arylsulfinyl, arylsulfonyl, arylthio, halogen, cyano, nitro, carboxylic acid,

epoxy moieties***; the second ingredient is a dopant solute***. The purpose of the dopant is to render the polyaniline electrically conductive. In general, such dopant solute is derived from a compound, which upon addition to the polyaniline, ionizes the polymer with co-committent formation of a dopant species. Illustrative of useful dopant species are those formed from ionization of neutral ionic compounds, ***polymers***. See col. 8, lines 11-35,50-67;col. 4, lines 8-68; col. 9, lines 1-20, 21-68; col. 10, lines 1-68.

Claims 18-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Yang (USP 5,723,873).

Yang (USP 5,723,873) discloses bilyaer composite electrodes for diodes, wherein the composite materials include a layer of a high work function inorganic material and a layer of conductive polyaniline, the anode is substantially transparent, these preferred materials can function as transparent electroded in light-related diodes such as LEDs and photovoltaic cells where they exhibit lower turn on voltages and higher efficiencies; which anticipates the claimed device. See abstract; col. 2, lin3s 6-11,15-20,22-28,40-47,48-67; cols. 3-5; col.6, lines 3-68; cols. 7-10; col. 12, lines 45-67; col. 13, lines 1-3,25-40,46-50,64-67; col. 14, lines 1-4; examples 15; claims 1-33.

Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Heuer, MacDiamid and Ono are cited to show the state of the art of electro conductive materials/polymers and articles/devices fabricated using the same.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patricia Hightower whose telephone number is (703) 308-2434. The examiner can normally be reached on Monday – Friday from 9:30 a.m. - 6:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (703) 308-2462. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

P. Hightower:mn
May 22, 2003

P. Hampton-Hightower
Primary Examiner
Art Unit 1711